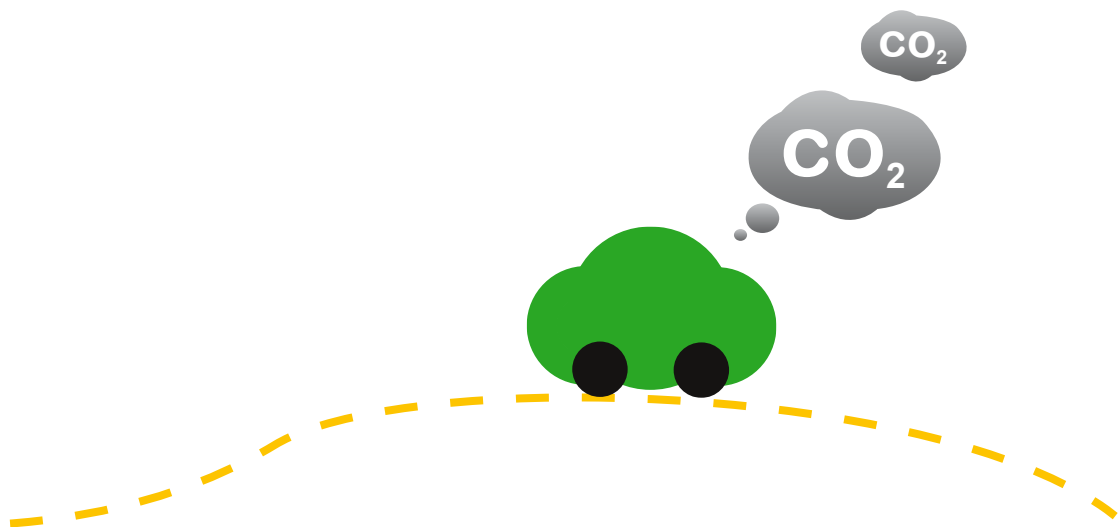


Cleaner, More Efficient Vehicles Tool:

A User's Guide



The views expressed in this guide are not necessarily those of and/or endorsed by all partners of the Global Fuel Economy Initiative.

The tool is available online from <http://www.unep.org/transport/gfei/autotool/>, and in CD format.

Questions? Contact UNEP at clean.transport@unep.org.

UNEP promotes environmentally sound practices globally and in its own activities. This publication is printed on paper from sustainable forests including recycled fibre. The paper is chlorine free, and the inks vegetable-based. Our distribution policy aims to reduce UNEP's carbon footprint.

About the Tool

Developed by the United Nations Environment Programme (UNEP), the Cleaner, More Efficient Vehicles Tool provides information and real-world examples of technology and policies used around the globe to improve auto fuel economy.

This innovative Tool is available online from www.unep.org/transport/gfei/autotool, and is aimed at policy makers seeking to understand and design effective policies to improve energy efficiency and lower greenhouse gas emissions in their countries. It contains guidance coupled with case studies describing what is being done to improve automotive fuel economy around the world.

The Tool was designed to answer basic questions about what auto fuel economy is, how it works on a practical level, what governments are doing to lower their reliance on fossil fuels and reduce emissions, the role of technology in saving fuel, and how policy makers can start to promote cleaner, more efficient cars on a practical level.

This guide will take you through the main functions and content available in the Tool, allowing you to begin exploring at your own pace.



What's in the Tool?

The Tool is designed to be intuitive, allowing you to start anywhere. It is made up of 5 sections or coloured, themed tabs.

These are:

- **Introduction:** outlines the basic principles and reasons for improving automotive fuel economy. The section also includes information on the basics of defining fuel economy and research on vehicle safety vs. fuel economy (under Benefits of Action).
- **Instruments:** allow users to explore current auto fuel economy policies and programs – from standard-setting and fiscal policies, to labeling programs and auto technology options.
- **Case Studies:** showcase country and regional examples that summarize approaches to improving auto fuel economy – from Latin America, Europe, Africa and Asia.
- **Resources:** how efficient are cars in your country? This section includes detailed guidance on how to plan for and calculate a national fuel economy estimate in order to track progress and formulate policy, a fuel economy questionnaire, and a list of further reading and resources.
- **Global View:** presents the information available in the dark blue Case Studies section – in map form. Users should first choose a region, then a particular policy to explore. Country examples which showcase the chosen policy will appear in green highlight. Clicking on a highlighted country takes the user to that specific section within the chosen country's "case study." See Highlights on the next page for more information on using the map.



TIP: The 'Back to Map' icon available at the top right hand corner of the major Tool sections will link you directly to the mapping section of the Tool.

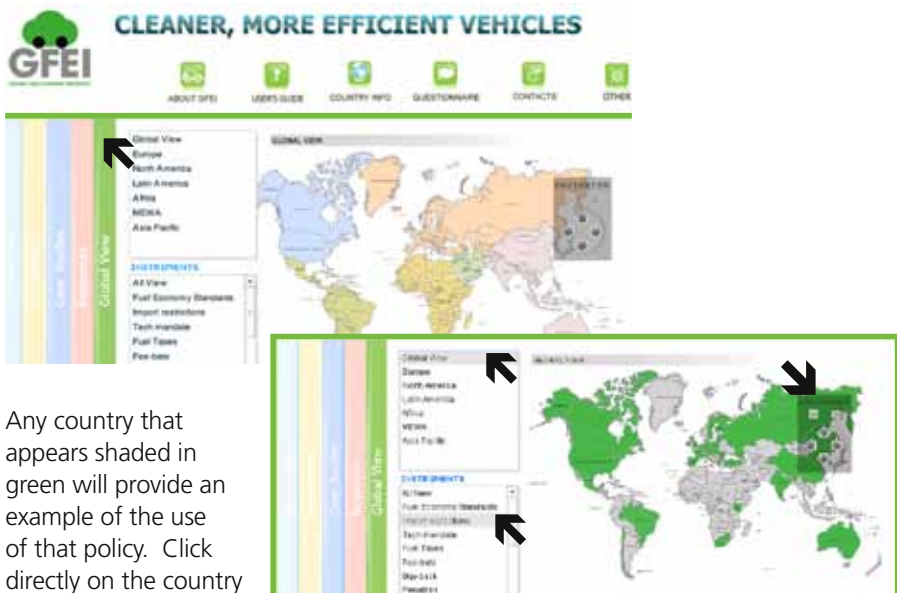


Getting the Most from the Tool

- Make sure that you are using the correct internet browser and version.
- Download the latest version of Adobe Flash Player onto your computer.
- Use Google Chrome, Mozilla Firefox or Internet Explorer versions 6 and above. The Tool will not display properly on versions 5 and below.

Highlights

- **Mapping:** the green Global View tab allows you to explore various fuel economy policies on a global, regional and national scale simply by choosing 'Global View' or any of the 6 additional regions plus any of the 16 policies in the selection box below it.



Any country that appears shaded in green will provide an example of the use of that policy. Click directly on the country and you will be taken to the relevant country case study housed in the Case Studies section (the blue tab).

**Note that the Tool is not a complete, exhaustive listing of all countries worldwide that have policies related to fuel economy. It is a compilation of the examples that we currently have available and is updated regularly.*



- **Case studies:**

This is where you will find detailed country-level information on how auto fuel economy policies are developed and implemented. The right-hand menu allows you to explore by region.



- **At a glance:**

Want a summary of the tool's available country policy examples? By clicking on the Country Info icon at the top of the Tool, you will access a matrix listing the Tool's available information by policy and country.



- **Measuring fuel economy:** This is where you can find practical guidance on how to gather information on and calculate the fuel economy of cars at a national level.
- **Fuel economy questionnaire:** A handy survey with basic questions on your country's existing fuel and vehicle standards.



TIP: The transparent grey Navigator panel at the top right of the map allows you to zoom in and out, and shift the position of the map.



Browse the Tool...

Introduction

This section (light blue tab) gets you started on the basics of fuel economy. Through the 'Understanding the Problem' drop-down menu at the right, you can explore the basic principles and reasons for improving automotive fuel economy.

1. **About fuel economy:** defines the concept of 'auto fuel economy' and describes how it is measured.
2. **Overview of the GFEI:** provides an introduction to the work and thinking behind the Global Fuel Economy Initiative.
3. **Trends and scenarios:** outlines the worrying global numbers for CO₂ emissions, energy use and security, and global auto growth.
4. **Climate change:** provides a primer on the science of global warming. A handy animation illustrates the concept.
5. **Reducing air pollution:** lays out the global toll of pollution from the transport sector.
6. **Setting the foundation:** emphasizes the importance of fuel quality for lower vehicle emissions and increased efficiency.
7. **Flanking measures:** touches on the importance of non-motorized and public transport to sustainable mobility solutions.
8. **Benefits of action:** briefly discusses the potential of auto fuel economy measures in terms of environmental sustainability, financial savings for consumers and governments alike, energy security, trade harmonization, and vehicle safety.



Instruments

The yellow Instruments tab allows you to explore the elements of current auto fuel economy policies and programs – including policy, economic and technology instruments. Wherever possible, country examples are used to illustrate policies, incentives, communication strategies and technologies.

The drop-down menu at the right features 5 expandable instrument areas: Policy, Economic, Traffic Control, Information and Technology.

1. Regulatory policies

- **National standards:** includes information on how countries set fuel economy standards.
- **Import restrictions:** explains how countries choose to control the age and level of auto technology that enters their market – with real country examples.
- **Technology mandates:** details how governments use policies to encourage a particular type of more efficient vehicle or fuel.

2. Economic instruments

- **Fuel taxes:** the role of fuel taxes in curbing emissions.
- **Feebate:** discusses the design and implementation of national feebate programmes, or fees on inefficient technology and rebates on efficient vehicles.
- **Buy-backs:** also called “scrappage” programmes used to accelerate the retirement of older vehicles and uptake of new technology.
- **Penalties:** examples of countries that place fines on vehicle manufacturers that fail to meet fuel economy/consumption standards.
- **Other tax instruments:** using national examples, this section discusses the variety of fees added to the cost of vehicles to curb emissions and encourage cleaner technology.
- **Varied registration fees:** explains a simple measure used to incentivize cleaner vehicles.
- **R & D:** or research and development programs designed to develop fuel efficient vehicles new generation fuels.



3. Traffic control measures

- Priority lanes:** describes the use of designated traffic lanes on roadways to prioritize low emission vehicles.
- Parking:** explains the potential of reduced parking fees in cities to aid the use of low emission cars.
- Road Pricing:** includes information on congestion charging schemes, with concrete examples.



4. Information

- Labeling:** includes examples of new and used national vehicle emission labeling programs.
- Consumer awareness:** discusses the use of online databases and on-board fuel economy displays to help consumers make better choices.
- Reporting:** details efforts by the auto industry to voluntarily provide fuel economy data to the public.
- Test cycles:** explains the process of homologation whereby cars are tested for fuel economy through standard procedures before being authorised for sale.



5. Technology

This section will take you through the technology that can help to improve auto fuel economy - including advances for greater fuel economy in:

- internal combustion engines
- fuels
- electric vehicles
- lightweight materials
- transmissions and drivetrains
- green tires
- vehicle weight and power

Case Studies

The dark blue tab will take you to the Case Studies section, which allows you to explore auto fuel economy policies and programs by country, or region as in the case of the European Union.

The Case Studies section essentially looks at who is doing what on fuel economy – and how.

Country examples, or case studies, are organized by regional drop-down menus – Europe, North America, Africa, Latin America, Middle East, and Asia.

Each case study is organized to display the essential policy, economic and information instruments discussed in the Instruments section, namely Regulatory Instruments, Economic Instruments, and Labeling. References and further information sources are provided at the bottom of each case study.



TIP: A small “print” icon at the top of each case study allows you to download the entire case study in PDF format for printing purposes.



Resources

Want more information on auto fuel economy? Or guidance on how to calculate your country's average auto fuel economy?

1. **Developing a baseline:** the red tab contains a section on 'Developing a baseline' that allows you to learn how to estimate average vehicle stock efficiency and CO₂ emissions. This chapter instructs you on the type of information you will need and how to actually calculate a baseline measurement. It also provides country examples.

The GFEI supports countries to gather basic vehicle information and calculate baseline measurements for policy-making.

2. **Interactive questionnaire:** this simple form allows you to explore different options for implementing a strategy for a cleaner, more fuel efficient vehicle stock.



3. **Case studies summarized:** the "Case Studies at a Glance" link allows you to view all available case study information (or the country information available in the dark blue Case Studies tab) in a summarized spreadsheet.
4. **Further reading:** websites and reports that are useful further reading on auto fuel economy.



About the Global Fuel Economy Initiative

The global vehicle fleet is set to increase three-to-four fold in the coming decades, with approximately 90% of this growth to take place in developing and transitional economies.

The health, environment and climate impacts of this growth will be monumental and there is an urgent need to ensure that the most fuel efficient technology and enabling policies are adopted by all countries. Without a truly global effort on transport emissions, the world will not be able to adequately address CO₂ emissions.

Cost effective off-the-shelf technologies are available today, but the policies to catalyze their use are not in place in emerging markets - in fact, only a handful of developing countries actually have some form of clean vehicle policy in place.

The window of opportunity to make the right choices is small and getting smaller – the boom in vehicle growth in developing and transitional countries is still ahead of us, with the steepest increase taking place after 2015. Policies, including energy efficiency standards, need to be put in place today to ensure that the additional 2 billion vehicles that will be added to the global stock are clean and efficient.

The GFEI (www.globalfueleconomy.org) works to promote effective strategies to lower emissions from cars at global, regional and national levels. We work on all fronts to ensure that by 2050 the world's cars will be twice as efficient as they are today.

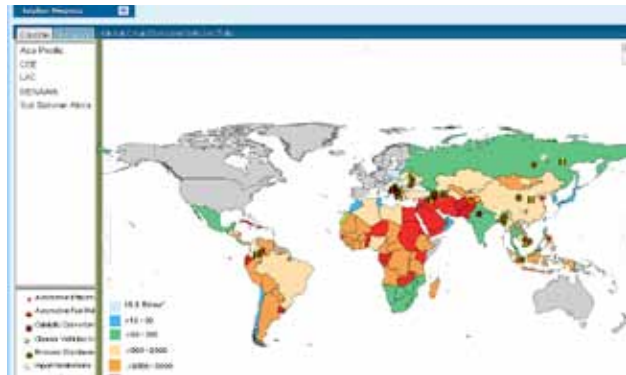
We are the leading initiative on auto fuel economy, implementing IPCC and G8 recommendations on road transport emissions. The GFEI is led by 4 global organisations: the International Energy Agency, the OECD International Transport Forum, the FIA Foundation and the United Nations Environment Programme. We support research and knowledge-sharing on auto fuel economy and we work with countries to develop and implement clean and efficient vehicle policies.



More Tools to Support Cleaner Fuels, Vehicles

UNEP has developed a number of products - publications and online tools - that serve as stand-alone resources for consumers and policy makers interested in learning about the role of fuel quality and vehicles in ensuring cleaner air, lower greenhouse gas emissions, and lower energy costs.

The global **Clean Fuels and Vehicles Database** is a global public database for fuel quality and vehicle emission standards available from http://www.unep.org/cleanfleet_database/



The UNEP/TNT **Toolkit for Clean Fleet Strategy Development** assists fleet managers - both public and private - to assess and manage the environmental impact of vehicles in their fleets. It has been used by TNT delivery fleets and humanitarian aid fleets to measure emissions and fuel savings while assessing the potential benefits from new technology and eco driving. The tool is available online from <http://www.unep.org/tnt-unep/toolkit>.









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